The 1981 Personal Income Tax Cuts: A Retrospective Look at Their Effects on the Federal Tax Burden

John A. Tatom

THE tax structure in 1984 is an excellent watershed from which to assess the effects of the 1981 personal income tax changes on the federal tax burden. This is the first year in which the phased reduction of marginal tax rates became fully effective; it is the last year in which the personal tax structure was not indexed. Under the 1981 tax act, the brackets used to compute personal income tax liability will be indexed to inflation beginning in 1985.

Since 1981, analysts have examined the effects of these tax changes using various assumptions about economic performance. Some analysts focused only on the 23 percent rate reductions, suggesting that taxes were being reduced. Casual observers questioned the relevance of such a view, since it was difficult, especially at the individual or family level, to observe any actual reduction in tax burden. Other analysts compared the rate reductions to indexing, suggesting that inflation would raise nominal incomes and add to the tax burden, roughly offsetting the effect of rate reductions.[1] More recently, some analysts have attempted to use post-1981 data from income tax returns to analyze the impact of the tax rate changes on actual reported tax burdens.[2] Ironically, while early analyses required assumptions about 1981–84 economic developments, recent analyses often have neglected the effect of changing economic conditions on their conclusions.

This article examines the effects of the personal income tax rate reductions on the burden of federal taxes.[3] The impact of assumptions about the 1981–84 economic conditions, particularly inflation, is minimal since these conditions are now largely known. Alternative assumptions are employed, however, to highlight the importance of changes in real income. The effects of the tax law are standardized by examining the change in the tax burden facing three representative households: families with the 1980 median family income, and families that earned one-half or twice the median level.

John A. Tatom is an assistant vice president at the Federal Reserve Bank of St. Louis. *Thomas A. Pollmann provided research assistance.*

[1]See Meyer and Rossana (1981), Meyer (1983), McKenzie (1982) and Tatom (1981, 1984) for discussions of the absence of tax reductions due to bracket creep.

[2]Gwartney and Stroup (1984), *Wall Street Journal* (April 1984) and the Congressional Budget Office (1984) provide examples of the use of actual data without adjustment for changing economic conditions. The shortcomings of ignoring changing economic conditions in the former two cases are noted in *Business Week* (1984) and in McCulloch, et al. (1984).

[3]Only personal income and social security taxes are analyzed here; federal excise and corporate income taxes and state and local government receipts are not. These other taxes have risen substantially since 1980. From 1980 to the first half of 1984, federal excise tax liabilities rose 41 percent to $55 billion, and corporate income taxes rose 5.7 percent to $74.3 billion. State and local government tax receipts rose from $297.4 to $515.1 billion, a 73.2 percent increase over the same period.

Table 1
The 1980 Federal Tax Burden at Three Levels of Income

	One-half median income	Median income	Twice median income	
			One wage earner	Two wage earners
1980 Income	$10,500	$21,000	$42,000	$42,000
Personal Income Tax	$454	$2,505	$9,366	$9,366
Average Tax Rate	4.3%	11.9%	22.3%	22.3%
Marginal Tax Rate	16.0%	24.0%	43.0%	43.0%
Employee-Paid Social Security Tax	$644	$1,287	$1,588	$2,575
Personal Tax Plus Employee-Paid Social Security Tax				
Average Tax Rate	10.5%	18.1%	26.1%	28.4%
Marginal Tax Rate	22.1%	30.1%	43.0%	49.1%
Total Tax Burden[1]				
Average Tax Rate	16.6%	24.2%	29.9%	34.6%
Marginal Tax Rate	28.3%	36.3%	43.0%	55.3%

[1]Includes personal income tax and employee- and employer-paid social security tax.

The federal personal income tax has become increasingly complex. Differences in the economic circumstances and choices made by households led to different taxes in 1980 or 1984 and to different tax changes even for households with the same income levels. Interested readers may wish to pull out their own 1980 federal income tax return and preliminary data for 1984 to determine the outcome for their household. Are you better off, taxwise, in 1984 than in 1980? Do the changes in your tax burden since 1980 suggest that your tax changes are a source of recent and prospective deficits?

THE 1980 TAX BURDEN

The median family income in 1980 was about $21,000.[4] Table 1 shows the 1980 federal personal income tax and Social Security tax liabilities for this level of income and for one-half and twice this median income. In computing personal taxes, it is assumed that there are four people (exemptions) in each household, that a joint return is filed, that all income is adjusted gross income and that there are no other deductions, credits or income adjustments.

In 1980, the employee-paid Social Security tax equaled 6.13 percent of wages up to a maximum of $25,900, with an equal amount being collected from the employer. Since the cost of employment includes both payments, the tax burden borne by the recipients of the respective income levels are given both ways: including and excluding the employer-paid Social Security tax. It is the former that represents the total federal tax burden.[5] The analysis here concerns wage

[4]In 1980, the median family money income was $21,023. The median measure indicates the level at which one-half of all families receive more income and one-half receive less. The average size family in 1980 contained 3.27 members and the average number of wage earners per family was 1.63. The range of income in 1980 considered here encompasses most families. In 1980, 18.9 percent of families had incomes below $10,000 and 13.5 percent of families had incomes in excess of $40,000. See *Statistical Abstract of the United States* (1982–83), pp. 432–34.

[5]Social security taxes are measured as a percent of "income." The employer-paid portion, however, is deducted before the income is measured. As a percent of wage earnings up to the maximum tax base, the employer-paid tax is $t/1+t$ on average and at the margin, where t is the statutory rate on wage "income." Whether an increase in the employer-paid social security tax is borne from nominal take-home wage reductions or by product price increases is not important here. In either case, the real wage, the purchasing power of wages, is reduced. For discussions of this "incidence" issue, as well as thorough discussions of the tax system and its effects, see Pechman (1983) and Musgrave and Musgrave (1976).

income; the overall tax burden, at the personal level, on such capital income as dividends, or interest is limited to the personal income tax rates. The additional taxation of income from capital at the corporate level, however, is generally greater than the additional burden of Social Security taxes shown here.[6]

The tax burden is measured in two ways: by the average tax rate and the marginal tax rate. The average tax rate is simply the amount of taxes paid per dollar of total income. The marginal tax rate is the increase in federal tax liability per dollar of additional income; it is the relevant measure of the impact of the federal taxes on incentives to work, save and invest. Both measures are shown in table 1.

The tax calculations apply to a one- or two-wage-earner family at the $10,500 and $21,000 levels. At $42,000, however, the taxes are calculated for both one-wage-earner and two-wage-earner families. For the latter, it is assumed that each wage earner earns less than the Social Security maximum tax base of $25,900 in that year.

If one worker's earnings exceed this base in 1980, then the relevant marginal tax rate applicable for the high wage-earner is that indicated in the one-worker calculation, while the rate applicable for the low wage-earner is that indicated for the two-worker calculation. The average tax rates for such a family are in the range bounded by the average tax rates for the one- or two-wage-earner families. For example, if one worker earns $26,000 and the other earns $16,000, the former faces an overall marginal tax rate of 43 percent, while the latter faces a marginal tax rate of 55.3 percent. Such a household had an average tax rate of 34.5 percent, based on the $9,366 paid in personal income taxes, the maximum Social Security payment of $3,175 by the high wage-earner, and $1,962 paid in Social Security for the low wage-earner for a total of $14,503 on $42,000 of income.

Some General Properties of the Federal Tax Structure

The data in table 1 provide not only a benchmark from which to assess 1981–84 tax rate changes, but also an illustration of some important properties of the tax system. Moving from left to right in the table, one observes how marginal and average tax rates rise as income rises, because the marginal tax rate exceeds the average tax rate. In addition, one can observe the relative importance of social security taxation on both average and marginal tax rates.

At the low income, the employee-paid Social Security tax (one-half the total) exceeds the personal income tax liability. Even at the 1980 median income, the total Social Security tax liability [(.1226)($21,000) = $2,575] exceeds the personal income tax liability ($2,505). Moreover, the Social Security tax is regressive since, at wage-income levels above $25,900 in 1980, the marginal Social Security tax rate is zero. Thus, the gap between the average or marginal personal income tax rates and the average or marginal tax rate measures of the total burden narrows as income moves above $25,900. For example, at $42,000 (one worker), the difference between the overall tax burden and personal income tax average rates is only 7.6 percentage points (29.9 – 22.3); for the marginal tax rates, the difference is zero. At the lower two income levels, this difference is 12.3 percentage points.

THE CASE FOR THE PERSONAL INCOME TAX RATE REDUCTIONS

Although one argument favoring the marginal tax rate cuts under the 1981 tax act is essentially a normative case, it can be illustrated using the data in table 1. The marginal tax rates shown appear to be "high," even at relatively low levels of income. In the case of a two-worker couple earning $42,000, with each earning less than $25,900, each worker faced a marginal tax rate of over 50 percent (55.3 percent).

A stronger case for the 1981 rate-reduction legislation can be made based on what would have happened to tax burdens if the tax changes had not been made. Had no income tax rate changes been approved, inflation would have pushed all families into higher tax brackets. Coupled with existing provisions for Social Security taxation in 1980, these increases would have raised the average and marginal tax burden substantially, even if the purchasing power of family income (real income) had been unchanged. These effects are shown in table 2.[7]

Income in table 2 equals the 1980 levels adjusted for the 26 percent increase in the general level of prices (consumer price index for all urban consumers) from

[6] See Joines (1981), for example, for a discussion of the differential taxation of capital and labor income.

[7] In 1981, the strongest case for a tax cut was based on the mounting tax burden since 1965. A comparison of the 1980 families tax burden using 1965 and 1980 rates is given in the appendix.

Table 2

What the 1984 Federal Tax Burden Would Have Been under the 1980 Personal Income Tax Law: No Change in Real Income

	One-half 1980 median income	1980 median income	Twice 1980 median income	
			One wage earner	Two wage earners
1984 Income	$13,230	$26,460	$52,920	$52,920
Personal Income Tax	$923	$3,906	$14,249	$14,249
Average Tax Rate	7.0%	14.8%	26.9%	26.9%
Marginal Tax Rate	18.0%	28.0%	49.0%	49.0%
Employee-Paid Social Security Tax	$886	$1,773	$2,533	$3,546
Personal Tax Plus Employee-Paid Social Security Tax				
Average Tax Rate	13.7%	21.5%	31.7%	33.6%
Marginal Tax Rate	24.7%	34.7%	49.0%	55.7%
Total Tax Burden[1]				
Average Tax Rate	20.7%	28.5%	36.7%	40.6%
Marginal Tax Rate	31.7%	41.7%	49.0%	62.7%

[1]Includes personal income tax and employee- and employer-paid social security tax.

1980 to 1984; since income rises at the same rate as prices, no real income gain occurs. The 1980 tax tables are used to compute the personal tax liabilities. The Social Security tax calculations include both the rate increase to 13.7 percent (6.7 percent for employee-paid and 7.0 percent for employer-paid components) and the 46 percent rise in the tax base to $37,800, provided under the 1977 and 1983 Social Security Act amendments.[8]

Despite unchanged real incomes, the families in table 2 would have been subject to substantial jumps in their tax burdens from 1980 to 1984 under the 1980 tax law. Compared with 1980, the total tax burden, measured by taxes per dollar of income, shown at the bottom of tables 1 and 2, would have risen by 17.8 percent for the median-income family (28.5 percent divided by 24.2 percent = 1.178), 17.3 percent for a two-worker, high-income family and over 22 percent for the low-income and one-worker, high-income families.[9]

Bracket creep, the taxation of purely inflation-induced changes in wages, would have raised the average tax rate for the personal income tax by over 20 percent in most cases (see insert on pages 10 and 11).

[8]Social security taxes have an unusual feature in 1984 only, which does not affect the total burden of taxation, but does affect the calculations of the mix of the tax liability. Under the 1983 amendments, the Social Security tax rate in 1984 is 14 percent, instead of the 13.4 percent established in 1977 for 1984 or the 13.7 percent used here. The employee-paid portion of 7 percent is actually levied at a 6.7 percent rate, with the remainder (0.3 percent) paid from personal income taxes through a "tax credit" to Social Security funds. For purposes here, the Social Security tax in 1984 is 6.7 percent paid by employees and the employer-paid component is 7.0 percent.

[9]These percentage increases in the tax burden measure the rise in taxes as a percent of income, cents paid in taxes per dollar of income, on average. Similar calculations can be made for the marginal tax rate. Besides providing a meaningful measure of changes in the tax burden, percentage changes in the average tax rate provide a convenient approximation to percentage changes in nominal taxes. The latter is roughly the sum of the percentage change in nominal income and the percentage change in the average tax rate. Some analysts emphasize percentage-point changes in taxes; for example, a rise in the average or marginal tax rate from 5 to 10 percent is viewed as a 5 percentage-point rise instead of a 100 percent increase in taxes per dollar of income. The data for such calculations are provided in the tables, but the percentage-point calculations are not important here.

The rise for the lowest income level, from a 4.3 to a 7.0 percent average tax rate, would have been a staggering 63 percent increase. Even marginal tax rates would have risen sharply despite the unchanged real income. The change from table 1 to table 2 indicates that total marginal tax rates would have risen by 12 to 15 percent under 1980 tax laws. These relatively large percentage increases are associated with much smaller changes in the marginal tax rate for the personal income tax of 2 to 6 percentage points and a 1.44 percentage-point increase in the marginal tax rate for Social Security (12.26 percent to 13.7 percent).

Higher Real Income Raises the Federal Tax Burden

Of course, average and marginal tax rates actually would have increased more than the comparison of tables 1 and 2 indicates, because of typical real income increases and the progressive personal income tax system. From 1980 to 1984, real GNP per capita rose about 8 percent, or slightly less than 2 percent per year.

If each of the families in table 2 had experienced similar growth in their real incomes, their incomes would have been 8 percent higher than those shown in table 2 and their tax burdens would have been higher as well, given the progressive personal income tax. The overall average tax rates in table 2 would have risen by 2.5 percent to 4.2 percent above those shown in table 2.

For the 1980 median-income family shown in table 2, the personal income tax average rate, the component of the tax system most sensitive to real growth, would have risen from 14.8 percent to 15.7 percent, a 6.1 percent rise due to 8 percent real growth.[10] At relatively low incomes, the average tax rate is most sensitive to income changes because marginal tax rates exceed average tax rates by the greatest amount; 8 percent real income growth for the low-income families in table 2 would raise their personal income taxes much more, so that the average tax rate would rise from 4.3 cents per dollar of income to 7 cents per dollar, an 11.4 percent rise in the average tax rate. Such real income growth would have raised the average tax rate for the high-income family in table 2 by about the same percent as that for the median-income family. None of the families shown in table 2 would have moved into higher marginal tax brackets due to typical real income growth from 1980 to 1984 under the old tax law.[11]

THE 1981 PERSONAL INCOME TAX RATE REDUCTIONS

To offset the escalating tax burden due to inflation and the rise in marginal tax rates, which reduced incentives to earn additional income through work, saving or investment, Congress approved a 23 percent cut in all personal income marginal tax rates to be phased in fully by 1984. For our purposes here, the major components of the 1981 tax act were a 23 percent cut in all marginal tax rates, phased in as a 5 percent cut in October 1981, 10 percent in 1983 and 10 percent in 1984, and the "indexing" of bracket incomes and personal exemptions beginning in 1985.[12]

Other Provisions of the Economic Recovery Tax Act of 1981

There were other important changes in the 1981 tax act, especially the adoption of the accelerated cost recovery system, extended investment tax credits and reductions in tax rates on business income. These changes have been highly successful in stimulating business investment and productivity growth, as intended, and are not examined here.[13] Two other non-rate provisions had important effects on personal income taxes: the extension of tax-deferred income treatment through IRAs and the all-savers certificates (July 1981 to November 1982), and an earned income credit for two-wage-earner families.[14] These are not

[10]The rise in average tax rates with unchanged marginal tax rates arises from the fact that additional income is taxed at the marginal tax rate, which exceeds the average tax rate. It is also this discrepancy that gives rise to bracket creep for purely inflation-induced increases in nominal income.

[11]A $21,023 income increased 26 percent for inflation and 8 percent for real growth in 1980 to yield a 1984 income of $28,608, slightly above the income necessary to move into a new bracket. The conclusion in the text holds for this family due to rounding. This family would have jumped one bracket due to inflation (from a 24 percent marginal income tax rate to a 28 percent rate) and another bracket due to typical real income growth (from a 28 percent rate to 32 percent).

[12]The 23 percent cut arises because the tax rate was cut to 95 percent of its initial level, then 90 percent of this level, then 90 percent of that rate; the final tax rate is (.9)(.9)(.95) or 77 percent of its original level, a 23 percent cut. Differences due to rounding largely account for the departure from 23 percent for the marginal and average personal income tax rate reductions examined in table 3.

[13]See Ott (1984), Meyer (1983) and Tatom (1981). Also, see the *Economic Recovery Tax Act of 1981* for details of other non-rate provisions affecting the personal income tax.

How Typical Is Bracket Creep?

The table at right shows the brackets for taxable income for married persons filing joint returns under 1980 and 1984 income tax schedules. The income brackets were unchanged from 1980 to 1984, except that the top two were phased out because of reductions in the income level at which the maximum 50 percent marginal tax rate is achieved. For a family of four, the size of the brackets spans increases in income ranging from 15.6 to 46.7 percent. Focusing on those brackets up to $109,400 of taxable income, the average bracket size is 25.7 percent of the income at the bottom of the bracket. This is the maximum extent of income gain necessary to move from one bracket to the next.

Such percentage changes in money income are quite easily obtained over four-year periods, when inflation proceeds at 6 percent per year or so. When real income rises at 2 to 3 percent per year, bracket changes due to real growth alone occur for the average bracket size only within 8 to 12 years. At the smallest bracket differences taxable incomes of $16,000 and $35,200, bracket movements proceed much more rapidly and the marginal tax rate rises quite sharply. Under the 1980 tax law, the marginal rate at $16,000 of taxable income was 24 percent, and, at $35,200, it was 43 percent. Without index-

1980 and 1984 Personal Income Tax Brackets for Persons Married and Filing Joint Returns

Taxable income	Income[1]	Percent change in income in bracket
$ 3,400 to $ 5,500	$ 7,400 to $ 9,500	28.3%
$ 5,500 to $ 7,600	$ 9,500 to $ 11,600	22.1
$ 7,600 to $ 11,900	$ 11,600 to $ 15,900	37.1
$ 11,900 to $ 16,000	$ 15,900 to $ 20,000	25.8
$ 16,000 to $ 20,200	$ 20,000 to $ 24,200	21.0
$ 20,200 to $ 24,600	$ 24,200 to $ 28,600	18.2
$ 24,600 to $ 29,900	$ 28,600 to $ 33,900	18.5
$ 29,900 to $ 35,200	$ 33,900 to $ 39,200	15.6
$ 35,200 to $ 45,800	$ 39,200 to $ 49,800	27.0
$ 45,800 to $ 60,000	$ 49,800 to $ 64,000	28.5
$ 60,000 to $ 85,000	$ 64,000 to $ 89,000	39.1
$ 85,000 to $109,400	$ 89,000 to $113,400	27.4
$109,400 to $162,400	$113,400 to $166,400	46.7
$162,400 to $215,400[2]	$166,400 to $219,400	31.9
$215,400 and over[2]	$219,400 and over	—

[1]Includes a $4,000 exemption for four dependents.
[2]These brackets were phased out under the 1981 tax act.

formally analyzed here. Another important change was to end the differential tax treatment of capital income for relatively high-income families. In 1980, marginal personal income tax rates on income from capital rose from 54 percent to 70 percent as taxable income rose from $60,000 to $215,400. This distinction was dropped in 1982, so that all taxable income was subject to the same marginal tax rate.

The Effects of the 1981–84 Rate Reductions

With the rate reductions included in the 1981 tax act, the three families shown in table 2 faced the tax burden shown in table 3.[15] Compared with what they

[14]In 1984, personal income taxes can be reduced by contributions of up to $2,000 to IRA or deferred income plans that were not allowed for many taxpayers in 1980. As a percent of income, these benefits are, in the limit, equal to the marginal tax rate times $2,000 divided by income.

The new deduction for married couples when both work is limited to 10 percent of the lower income up to $30,000. The benefit subtracts the marginal tax rate times a maximum of one-half of income for a two-wage-earner family. The maximum reduction in the average personal income tax rates in table 3 are thus (0.05 × 14 percent) 0.7 percent at the lowest income, (0.05 × 22 percent) 1.1 percent at the median-income level, and (0.05 × 38 percent) 1.9 percent for the high-income family.

[15]The marginal personal income tax rate for the low-income family here masks the marginal tax burden at lower incomes. For incomes between $6,000 and $10,000, the earned income credit declines at a 12.5 percent rate on additional income. Thus, for a family of four, the marginal personal income tax rate is 12.5 percent for incomes from $6,000 to $7,400, 23.5 percent from $7,400 to $9,600, and 24.5 percent from $9,600 to $10,000. At $10,000 the marginal personal income tax on additional income drops to 12 percent and remains there until income reaches $11,600, where it rises to the 14 percent indicated in table 3. Thus, at the margin, the tax burden on families with incomes from $7,400 to $10,000 exceeded that of 1980 median-income families. The situation is even worse for a head of household with one dependent, where the marginal personal income tax rate of 23.5 percent begins at an income of $6,000 and rises to 26.5 percent as income approaches $10,000. Bracket creep falls most heavily on persons in these brackets because of both the large difference between marginal and average tax rates at low incomes and the complicated and non-indexed earned income credit.

ation, inflation created a manifest problem of bracket creep over relatively short periods of time.

Bracket creep, however, does not simply refer to periodic inflation-induced shifts into higher marginal income tax brackets.[1] It also includes the effects of inflation on average tax burdens within a bracket due to inflation-induced wage gains. For example, consider the low-income family in 1980 shown in table 1 in the text. In 1980, this family earned $10,500, had a taxable income of $6,500 after four personal exemptions and was in the bracket for taxable income that ranged from $5,500 to $7,600. The tax in this bracket was $294 plus 16 percent of the excess of taxable income over $5,500. At the low end of the bracket, the average tax rate was 3.1 percent, while at the high end of the bracket, the average tax rate was 5.4 percent. The low-income family at $10,500 paid 4.3 percent.

Inflation initially pushes up nominal income within the bracket — income rises from $10,500 to the top of the bracket, $11,600, a 10.5 percent income increase. Within the bracket, bracket creep pushes the average tax rate for the family with an unchanged real income from the 4.3 percent average tax rate, up to the 5.4 percent rate before a bracket rate change is triggered, further accelerating the climb in the average tax rate.

The rise in the average tax rate within the bracket arises because of the fixed nominal value of the exemptions, which decline in real value because of inflation and because the marginal tax rates applied to the inflation-induced income changes exceed the average tax rate. For example, for the 1980 low-income family, the marginal rate of 16 percent exceeded the 4.3 percent average tax rate shown in table 1 in the text. Thus, a $1,000 rise in income resulting solely from about a 10 percent increase in all prices would be taxed at the marginal rate of 16 percent, adding $160 to the $454 paid on the lower income instead of at the average rate of 4.3 percent, or $43. As a result, taxes of ($160 + $454) $614 on the higher income of $11,500 would yield an average tax rate, or tax per dollar of income, of 5.3 percent.

If the $1,000 gain in income had resulted from real income growth, not from inflation, the rise in the tax burden would be consistent with the "vertical equity" principle built into the progressive income tax; this principle is that higher real income families should pay higher average tax rates. When the $1,000 gain reflects inflation-induced bracket creep, however, families with the same real income will pay higher average tax rates after prices rise than they did before. The intertemporal change in the tax burden on a family with the same real income violates the horizontal equity principle that "equals should be taxed equally."

The sensitivity of the average tax rate to changes in income, whether due to price increases or real income gains, is indicated by the ratio of the marginal tax rate to the average tax rate at any level of income.[2] This ratio is largest at relatively low income levels. Thus, a given percentage rise in income raises the average tax rate the most at low income levels; similarly, a given reduction in real income reduces the average tax rate more at low income levels than at high ones.

[1] This point is commonly confused. Bracket creep occurs if marginal tax rates exceed average tax rates. Its existence does not depend on rising marginal tax rates.

[2] The elasticity of the average tax rate with respect to income is the ratio of the marginal to the average tax rate minus 1.

would have been (table 2), taxes were reduced substantially. For the personal income taxes considered alone, the cuts in average and marginal tax rates were close to the target. Average tax rates fell by 22.9 to 23.6 percent for the three family incomes. Similarly, marginal tax rates fell by 21.4 to 22.4 percent.

But the results shown in table 2 never actually occurred. A comparison of table 3 with the table 1 tax burdens, the actual taxes paid in 1980, indicates the effect of the 1981 rate changes on actual tax burdens, with no real income changes. Again, focusing only on the personal income tax liability, it appears that tax burdens were reduced. For the median-income family, the average personal income tax rate fell from 11.9 percent in 1980 to 11.3 percent in 1984, a 5 percent reduction; the marginal tax rate fell from 24.0 percent in 1980 to 22.0 percent in 1984, an 8.3 percent cut. These changes are shown in table 4. For all three groups, the marginal tax rates fell, but by far less than the 22 percent observed when comparing tables 2 and 3. For 1980 median-income taxpayers and higher-income families, average personal income taxes declined, but, again, by much less than 22 percent. At the relatively low income level, however, the average tax rate actually *rose* from 4.3 to 5.4 percent, a 25.6 percent increase.

It should be emphasized that the modest declines in the personal income tax rates from 1980 to 1984

Table 3

The 1984 Federal Tax Burden For Selected 1980 Real Incomes

	One-half 1980 median income	1980 median income	Twice 1980 median income: One wage earner	Twice 1980 median income: Two wage earners
1984 Income	$13,230	$26,460	$52,920	$52,920
Personal Income Tax	$711	$2,994	$10,958	$10,958
Average Tax Rate	5.4%	11.3%	20.7%	20.7%
Marginal Tax Rate	14.0%	22.0%	38.0%	38.0%
Employee-Paid Social Security Tax	$886	$1,773	$2,533	$3,546
Personal Tax Plus One-Half Social Security Tax				
Average Tax Rate	12.1%	18.0%	25.5%	27.4%
Marginal Tax Rate	20.7%	28.7%	38.0%	44.7%
Total Tax Burden[1]				
Average Tax Rate	19.1%	25.0%	30.5%	34.4%
Marginal Tax Rate	27.7%	35.7%	38.0%	51.7%

[1]Includes personal income tax and employee- and employer-paid social security tax.

Table 4

Changes in Tax Burdens From 1980 to 1984 for Selected Incomes: No Real Income Growth

	One-half 1980 median income[1]	1980 median income[1]	Twice 1980 median income: One wage earner[1]	Twice 1980 median income: Two wage earners[1]
Personal Income Tax Rates				
Average	25.6%	−5.0%	−7.2%	−7.2%
Marginal	−12.5	−8.3	−11.6	−11.6
Personal Income Tax Plus Employee-Paid Social Security Rate				
Average	15.2	−0.6	−2.3	−3.5
Marginal	−6.3	−4.7	−11.6	−9.0
Total Tax Rate				
Average	15.1	3.3	2.0	−0.6
Marginal	−2.1	−1.7	−11.6	−6.5

[1]Percent change; excludes "deduction for a married couple when both work."

Table 5

1980-to-1984 Changes in Tax Burdens for Selected Incomes: Real Income Gain of 8 Percent

	One-half median income			1980 median income			Twice 1980 median income: One wage earner			Twice 1980 median income: Two wage earners		
	1980	1984[1]	Percent change	1980	1984[1]	Percent change	1980	1984[1]	Percent change	1980	1984[1]	Percent change
Personal Income Tax Rates												
Average	4.3%	6.0%	39.5%	11.9%	12.1%	1.7%	22.3%	22.0%	−1.3%	22.3%	22.0%	−1.3%
Marginal	16.0	14.0	−12.5	24.0	22.0[2]	−8.3	43.0	38.0	−11.6	43.0	38.0	−11.6
Personal Income Tax Plus Employee-Paid Social Security Rate												
Average	10.5	12.7	21.0	18.1	18.8	3.9	26.1	26.4	1.1	28.4	28.7	1.1
Marginal	22.1	20.7	−6.3	30.1	28.7[2]	−4.7	43.0	38.0	−11.6	49.1	44.7	−9.0
Total Tax Rate												
Average	16.6	19.7	18.7	24.2	25.8	6.6	29.9	31.0	3.7	34.6	35.7	3.2
Marginal	28.3	27.7	−2.1	36.3	35.7[2]	−1.7	43.0	38.0	−11.6	55.3	51.7	−6.5

[1]Excludes "deduction for a married couple when both work."
[2]Income is $23 below next personal income tax bracket, where the marginal tax rate rises 3 percentage points.

shown in table 4 were fortuitous. They occurred primarily because inflation was not high enough to entirely erode away the gains from the personal income tax cuts for some families. The 6 percent average inflation rate over the four years was well below the 7.8 percent average rate projected by the administration in 1981. Even that forecast was viewed as a rosy scenario at the time; for example, the Congressional Budget Office projected a 9.8 percent average annual inflation rate for the four years.[16] Instead of the 26 percent rise in prices and income that occurred due to inflation since 1980, these forecasts envisioned 35 and 45.3 percent increases, respectively. Either outcome would have led to higher average and marginal personal income tax rates for most families in 1984 than they faced in 1980, despite the 1981 tax cuts and unchanged real incomes.

When the social security tax boosts since 1980 are taken into account, however, even the modest gains cited above generally disappear. At the bottom of table 4, the measures of the total tax burden indicate that average tax rates generally increased and that marginal tax rates fell only slightly for 1980 median- and low-income families. Only two-wage-earner, high-income families appear to have received a slight reduction in their average tax rate. One-wage-earner families at the same income level fared worse, on average, because the rise in the average tax burden due to social security tax hikes was larger for families that earned more than the maximum social security tax base in 1980.

Changes in the Actual Tax Burden

The assumption of no real income growth used to derive the tax rates in table 3 is appropriate for assessing the tax cut effects alone. Actual tax changes from 1980 to 1984, however, include not only the effects of inflation on income and the tax law changes, but also the effects of real income changes on income. Families typically earned higher real income in 1984 than in 1980 and paid higher tax burdens because of the progressive income tax.

Representative actual tax burden changes for the 1980 median-income families are shown in table 5. There, nominal income (from table 2) has been raised 8

[16]See Congressional Budget Office (1981), p. 4.

percent to reflect the rise in per capita real GNP over the 1980–84 period. The table provides a comparison of 1980 and 1984 tax burdens assuming this typical growth.

Table 5 shows that the average personal income tax rate *rose* from 1980 to 1984 for 1980 median- and low-income families. When the higher 1984 Social Security taxes are included, the overall average tax rate *rose for every group shown*. Marginal tax rates generally declined slightly over the period.[17]

It is clear that the rise in the tax burden from 1980 to 1984, despite the enacted tax rate reductions, fell disproportionately on low-income groups.[18] In table 5, the rise in the overall average tax rate is smaller at higher incomes, raising the possibility that some high-income families actually paid lower average tax rates in 1984 than in 1980. Indeed, there is a "break-even" 1980 income level of $55,537 at which the 1984 average tax rate under the assumptions above equals that paid in 1980. Only about 6 percent of tax returns had an income in excess of $50,000 in 1980. More important, these returns totaled about 15.9 percent of all taxable income. Moreover, the tax reductions from 1980 to 1984 for these taxpayers were generally quite small either as a percent of 1980 average tax rates or in absolute percentage-point reductions. The largest tax reductions were about 2 percentage points for 1980 incomes from about $80,000 to $100,000, where, under the assumptions above, the average tax was about 40 to 42 percent in 1980.

Two Myths About the 1981–84 Tax Rate Changes

Public discussion of the 1981 personal income tax cuts has been dominated by two pervasive myths. The first is that the tax rate reductions led to lower personal income taxes for high-income families but little reduction in taxes for low-income families. The second myth is that personal federal taxes fell from 1980 to 1984 (either absolutely or relative to income), thus contributing to higher federal deficits.

Table 4 clarifies the source of the conflicting claims that 1981 tax changes either resulted in greater benefits for those with higher incomes or reduced marginal and average tax rates equally.[19] Both the personal income and overall average tax rate changes in table 4 indicate that the tax increases shown there fell disproportionately on lower-income families. The differential impact of the tax cuts shown in table 4, however, does not arise from the tax rate changes since 1980; indeed, the comparison of tables 2 and 3 shows that average and marginal tax rates were lowered by about the same percentage across income levels by the tax cuts enacted. The discriminatory tax changes shown in table 4 arose from bracket creep and Social Security tax hikes, increases that fall disproportionately on lower-income families. Fortunately, the greatest culprit, bracket creep, was largely eliminated by the 1981 tax act, though not until 1985.[20]

The second myth is that the tax changes contributed to the surge in the deficit in late 1981 and 1982, and to the magnitude of recent and prospective deficits.[21] Table 5 clearly indicates that, for representative families, the average tax burden rose from 1980 to

[17]Without rounding the 1980 median income down by $23, the marginal personal income tax rate of this group would have risen from 24.0 to 25.0 percent, and the overall marginal rate of this group would have risen from 36.3 percent to 38.4 percent. The maximum marginal tax rate of 50 percent of earned income was achieved at $60,000 of taxable income in 1980 and at $162,400 in 1984. The latter is equivalent to $128,889 in 1980 prices. At earned taxable incomes above this level, the marginal tax rate has been unchanged from 1980 to 1984.

[18]*Business Week* (1984) notes that between 1980 and 1984 changes in the distribution of personal disposable real income were such that the top quintile (20 percent of income recipients) gained, while the bottom quintile lost, both by about 8 percent. Families in the second lowest quintile lost close to 2 percent, while those in the third quintile registered a slight gain of about 1 percent. In the fourth quintile, the gain was about 3.5 percent. This pattern reflects the effects of tax changes, spending cuts and the business cycle, with a large share arising from the different increases in the overall average tax rates shown in table 5.

[19]These distributional changes have been noted by Conyers (1984) and Heller (1984), for example.

[20]Proponents of the view that taxes were cut are often leading opponents of indexing. See Silk (1984) and Heller (1984), for example. An equally persistent and widespread fallacy concerning the 1981 tax act is that indexing reduces taxes. See Silk, for example. Indexing simply restores "horizontal equity," the principle that families with equal incomes should be taxed equally. Under indexing, changes in prices from one year to another do not lead to increased average tax rates for families or individuals with unchanged real incomes. Indexing can result in a lower tax burden only if nominal incomes do not keep pace with inflation, that is, if real income falls; a decline in the real tax burden when real income falls, given prices, has been a feature of the U.S. tax system since its inception and is consistent with notions of vertical equity, the tax principle that families with higher incomes should be taxed more than families with low incomes, other things equal. Silk does note, however, the Committee for Economic Development's recognition of the discriminatory impact of bracket creep on low-income families and its removal through indexing.

[21]See Walter W. Heller (1984). He attributes the rise in the deficit to the "huge tax cut" or the "biggest tax cut ever." The alternative cyclical view of recent deficits, which owes much to Heller for its popularization, is developed in Tatom (1984). Hershey (1984) and Harris Bank (1984) echo the frequent claim that personal tax cuts occurred from 1980 to 1984. The former also blames the deficit on such cuts.

1984. Thus, personal tax rate cuts alone are not a likely candidate as a source of the increased federal deficit. While personal taxes as a percent of income did decline slightly at very high incomes, these reductions did not fully offset the generally larger increases in tax liabilities of lower-income groups that earn the larger share of income.

Of course, federal revenues would have been larger and the deficit correspondingly smaller in 1984, had the 1981–84 personal income tax rate changes not occurred. A comparison of tables 1 and 2 shows that 1984 revenues would have been about 22 percent larger under the old tax schedule. For fiscal year 1984, actual personal income taxes amounted to about $300 billion; this would have been about $85 billion larger under the 1980 tax rates. This "loss," however, was more than offset by the effect of inflation alone on federal tax receipts.[22] The apparent decline in the size of taxes relative to GNP was largely due to the cyclical decline in the economy and to cuts in business taxes.

SUMMARY AND IMPLICATIONS

Personal income tax rate reductions were offset by bracket creep and increased Social Security taxes for most families between 1980 and 1984. Typical households, whose income merely kept pace with inflation and economy-wide real income gains during the past four years, faced higher average tax rates in 1984 than they did in 1980. Although this may seem implausible given the large declines (about 22 percent) in marginal and average tax rates provided by the 1981 tax act, it is easily explained. The failure of tax rates, on average, to decline is the result of both the massive extent of bracket creep produced by inflation over the 1980–84 period and the sharp rise in Social Security taxes since 1980.

The most important undercurrent of the analysis here is the role of indexation in eliminating bracket creep. Such indexation, as provided in the 1981 tax act, will begin next year. Contrary to most discussions, indexation will not lower average tax rates or taxes per dollar of income, unless real incomes decline. Instead, indexation allows inflation-induced income changes to be taxed at average tax rates, not at higher marginal tax rates that would push up taxes faster than incomes, even if real incomes are unchanged.

The analysis indicates that, at relatively low incomes, the effects of bracket creep are the strongest. Thus, not surprisingly, the 1980–84 rise in tax burdens has been largest at the lowest income levels. These increases were reinforced by Social Security tax hikes, which also add disproportionately to the tax burden of relatively low-income households and families.

Tax reform is high on the political agenda, but some of the implications of the analysis here have not been central to the discussion.[23] Supply-side analysts could conclude from the analysis here that little effective cutting of marginal tax rates has resulted from the 1981–84 changes. To the extent such changes are desirable, a new initiative would be in order. At least three recent reform proposals include sharp reductions in marginal tax rates.[24] Against a backdrop of an indexed tax system, another round of such cuts would be more likely to be effective.

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[22]For example, see table 2 in Bureau of Economic Analysis (1984) which indicates that cyclically adjusted receipts rose $121.9 billion due to inflation alone in 1981–83. Data for 1984 are not yet available.

[23]See Miller (1984) and Pechman (1984) for discussions of the recent proposals for tax reform.

[24]See *Wall Street Journal* (November 1984). It points out that three major current reform proposals involve reducing the top marginal tax rate for the personal income tax to 25 to 35 percent from the current 50 percent level. At least one of these proposals, however, the Bradley-Gephardt bill, omits indexing.

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APPENDIX
The 1965 Tax Structure

Before 1981, marginal tax rates under the personal income tax had not been altered since 1965.[1] The increasingly onerous burden of the level of average and marginal tax rates in 1980 shown in table 1 in the text can be seen by comparison to the 1965 income tax structure.

Table A.1 shows the three representative 1980 families' tax positions, from table 1 in the text, based on 1965 taxes and prices for one-wage-earner families. In 1965, the social security tax was only 3.625 percent on wages up to $4,800 for both the employee- and the employer-paid amount. In 1965 prices, the 1980 income levels are considerably smaller, but purchasing power has been held constant. At the smaller 1965 nominal earnings, the 1980 median real income exceeded the maximum social security tax.

It should be noted that, at the income levels given for 1965, the 1980 families had considerably more real income than similarly placed families in 1965; the 1965 median-family income was only $6,957. The examples in table A.1 are for families that were comparatively better off than their 1965 counterparts; their real incomes were about 15.6 percent above the respective multiples of median income in 1965. Thus, their tax treatment represents higher tax rates for income than their 1965 counterparts.

The average personal income tax at each income rose substantially from 1965 to 1980. For the 1980 median income, the increase is 22.7 percent of the 1965 tax burden of 9.7 percent. Even at the low income, the average tax burden rose sharply (19.4 percent). At twice the 1980 median income, the average personal income tax rate rose from 15.1 percent in 1965 to 22.3 percent in 1980, a 48 percent increase in taxes per dollar of income, despite no change in real income. The marginal personal income tax rates rose sharply as well, increasing 6-2/3 percent at the low income, 26.3 percent at the 1980 median and 72 percent at the high income.

The overall tax burden on these unchanged real incomes ballooned much more. The overall marginal tax rate on the 1980 median income almost doubled, rising from 19 percent to 36.3 percent. The total marginal tax rate at the low income rose from 22.3 percent to 28.3 percent, a 27 percent increase, while that for the high-income family rose 72 percent. The overall average tax rates on these real incomes rose 53.7 percent for the low-income family, 72.9 percent for the median-income family and 72.8 percent for the high-

[1] From 1965 to 1981, many changes did occur in the personal income tax. These changes included alterations in standard deductions and personal exemptions, and changes in the incomes associated with brackets. The number of brackets and bracket rates, however, did not change.

Table A.1

The Federal Tax Burden on Selected 1980 Real Incomes in 1965[1]

	One-half 1980 median income	1980 median income	Twice 1980 median income
1980 Income	$10,500	$21,000	$42,000
1965 Equivalent	$4,021	$8,041	$16,082
1965 Personal Income Tax	$143	$779	$2,431
Average Tax Rate	3.6%	9.7%	15.1%
Marginal Tax Rate	15.0%	19.0%	25.0%
1965 Employee-Paid Social Security Tax	$146	$174	$174
Personal Tax Plus One-Half Social Security Tax			
Average Tax Rate	7.2%	11.9%	16.2%
Marginal Tax Rate	18.6%	19.0%	25.0%
Total Tax Burden			
Average Tax Rate	10.8%	14.0%	17.3%
Marginal Tax Rate	22.3%	19.0%	25.0%

[1]Assume one-wage-earner family for Social Security tax calculations.

income family. Except at the high income, the biggest share of the increase in the tax burden, on average or at the margin, was due to increases in both the Social Security tax rate and its tax base. At the relatively high-income level, almost two-thirds of the overall average and marginal tax burden increase occurred due to inflation-induced bracket creep. Even at the 1980 median real income, the jump in the tax burden due to bracket creep was substantial.

In summary, by 1980, marginal and average tax rates at all levels of income had risen dramatically from 1965 levels due to rising Social Security tax rates and its tax base, and to the effects of inflation pushing families into higher average and marginal personal income tax brackets. These forces continued from 1980 to 1984 and, in the absence of the 1981 tax cuts, would have further boosted the tax burden.